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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,030	06/21/2005	Tito Bacarese-Hamilton	FBU-001US	2254

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BOSTON, MA 02109-2127

EXAMINER

NUR, ABDULLAHI

ART UNIT	PAPER NUMBER
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2877

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/512,030

Applicant(s)

BACARESE-HAMILTON ET AL.

Examiner

Abdullahi Nur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/19/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 11 is rejected under 35 U.S.C. 101 based on the theory that the claim is directed to neither a "process" nor a "machine," but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. *Id.* at 1551. See 2173.05(q).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A single claim which claims both an apparatus and method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. See 2173.05(q).

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language.

These claims are omnibus type claims. Claims should not refer to the drawings because claims are to be complete in themselves. Incorporation by reference to a specific figure is permitted only in exceptional circumstance where there is no practical way to define the invention in words. See MPEP 2173.05 (s).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-8, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kain et al. (US Patent # 6,008,892) [hereinafter Kain] in view of Lacovara (US 2002/0067483 A1) and further in view of Rahbar-Dehghan (US Patent # 6,587,197 B1).

As to claims 1,5,8,10 and 11, Kain teaches an illuminator 18 for illuminating a material bound with a fluorophore (column 3 lines 1-11), at an appropriate wavelength to induce fluorescence; a detector 39 for detecting fluorescent signals emitted by the material; the device defining an optical system having an excitation optical path and a

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detection optical path (Fig. 1); characterized in that the illuminator comprises a light emitting diode that illuminates the material with incoherent illumination ((column 4 line 37-38); the material is deposited on a substantially flat surface and the illuminator simultaneously illuminates all, or a substantial portion of one of the microspots (Fig.2).

Kain does not disclose a signal processor which is a phase sensitive detector.

Lacovara disclose signal processor which is a phase sensitive detector 212.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the phase sensitive detector as taught by Lacovara into Kain's apparatus in order to recover the signal of interest from the composite of the signal and noise.

Kain does not disclose a microarray assay comprising a plurality of microspots.

Rhabar-Dehghan discloses microarray on slide glass (column 8 lines 40-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the microarray on the glass slide as taught by Rhabar-Dehghan into the Kain's apparatus for the purpose of supporting biological samples for observation (column 3 lines 1-13).

As to claim 2, Kain, Lacovara and Rahbar-Dehghan teaches all as applied to claim 1, and in addition Kain teaches an excitation filter 20 positioned in the excitation optical path to filter out longer wavelengths emitted by the LED before they reach the material to be analyzed.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kain, Lacovara and Rahbar-Dehghan in view of Mackinnon (US Patent # 6,721,471 B2).

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As to claim 4, Kain, Lacovara and Rahbar-Dehghan teaches all as applied to claim 1, and in addition Kain teaches an emission filter 23 positioned in the detection optical path to filter out any directly reflected illumination from the material.

As to claim 6, Kain, Lacovara and Rahbar-Dehghan teaches all as applied to claim 1, and in addition Kains teaches polarization-sensitive beamsplitters capable of separating the light of the incident and emission beams (column 5 lines 14-23).

As to claim 7, Kain, Lacovara and Rahbar-Dehghan teaches all as applied to claim 1, and in addition Kain teaches a polarising beam splitter 23 positioned to lie in both the excitation and detection optical paths (column 5 lines 21-22).

As to claim 3, Kain, Locovara and Rahbar-Dehghan teaches all as applied to claim 2, except that the excitation filter comprises a short band pass filter. Mackinnon teaches a short band pass filter in the illumination light path to select only desired illumination (column 14 lines 28-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the short band pass filter in the illumination light path in order to reduce any unwanted wavelengths.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdullahi Nur whose telephone number is (571) 270-1298. The examiner can normally be reached on Monday - Friday, 8 a.m. to 5p.m. EST.

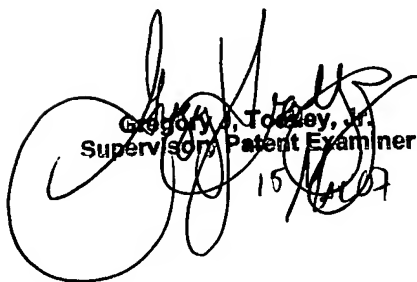
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abdullahi Nur
Patent Examiner
AU 2877

AN


Gregory J. Toatley, Jr.
Supervisor, Patent Examiner
15/11/07